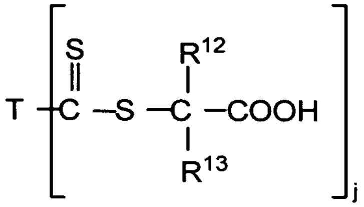
WHAT IS CLAIMED IS:

1. A composition, comprising :

a dithiocarbamate compound having the formula:



$$T\left[\overset{\overset{\displaystyle S}{\|}}{C}-S-\underset{R^{13}}{\overset{R^{12}}{\underset{|}{\overset{|}{C}}}}-COOH\right]_j$$

wherein j is 1 or 2;

wherein R^{12} and R^{13}, independently, is the same or different, is optionally substituted, and is a linear or branched alkyl having from 1 to about 12 carbon atoms; or an aryl group having from 6 to about 18 carbon atoms, optionally containing heteroatoms; or R^{12} and R^{13} can form and be part of a substituted or unsubstituted cyclic ring having from 3 to about 12 carbon atoms;

with the proviso that when j is 1, T is $-(NR^{15}R^{16})$, and when j is 2, T is a divalent radical having a nitrogen atom directly connected to each carbon atom of the two thiocarbonyl groups; and

wherein R^{15} and R^{16}, independently, is the same or different, optionally substituted, optionally contains heteroatoms, and is hydrogen; or a linear or branched alkyl having from 1 to about 18 carbons; or an aryl group or an aryl alkyl group having from 6 to about 18 carbon atoms, optionally saturated or unsaturated; or an arylalkyl having from 7 to about 18 carbons; or an alkenealkyl having from 3 to about 18 carbon atoms; or derived from polyalkylene glycol ether; or derived from an amine; or R^{15} and R^{16} are in the form of a substituted or unsubstituted cyclic ring with the nitrogen atom having a total of 4 to about 12 carbon atoms.

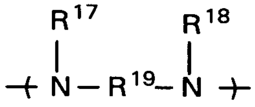
2. A composition according to claim 1, wherein j is 1, and wherein R^{12} and R^{13}, independently, is a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or wherein R^{12} and R^{13} are part of said cyclic ring.

3. A composition according to claim 1, wherein j is 1, and wherein R^{15} and R^{16}, independently, is a phenyl group, or an alkyl group having from 1 to about 10 carbon atoms, or hexamethylene, or wherein R^{15} and R^{16} are part of said cyclic ring.

4. A composition according to claim 2, wherein R^{15} and R^{16}, independently, is a phenyl group, or an alkyl group having from 1 to about 10 carbon atoms, or hexamethylene, or wherein R^{15} and R^{16} are part of said cyclic ring.

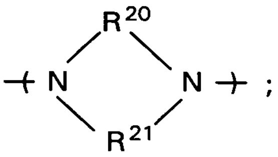
5. A composition according to claim 4, wherein R^{12} and R^{13} independently, is an alkyl having from 1 to about 4 carbon atoms, or wherein R^{12} and R^{13} are part of said cyclic ring.

6. A composition according to claim 1, wherein j is 2 and T is:



$$-N(R^{17})-R^{19}-N(R^{18})-$$

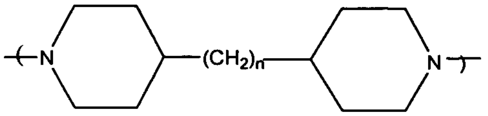
or



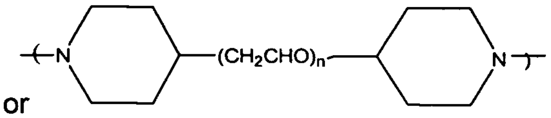
wherein R^{17} and R^{18}, independently, is the same or different, is optionally substituted, and is hydrogen; a linear or branched alkyl having from 1 to about 18 carbon atoms; or an aryl group having from about 6 to about 18 carbon atoms; or an arylalkyl having from 7 to about 18 carbon atoms; or a alkenealkyl having from 3 to about 18 carbon atoms;

wherein R^{19} is optionally substituted, or is non-existent; or an alkylene group having from 1 to about 18 carbon atoms; or derived from a polyalkylene glycol either having from 3 to about 200 carbon atoms; and wherein R^{20} and R^{21}, independently, is the same or different, and is optionally substituted, and is an alkylene group having from 1 to about 4 carbon atoms.

7. A composition according to claim 1, wherein j is 2 and wherein T is:



or



, wherein n is 0 to about 18.

8. A composition according to claim 6,

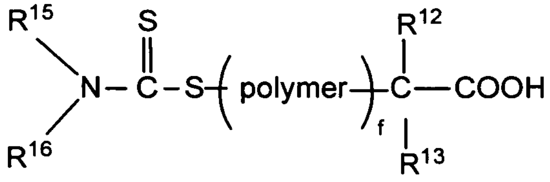
wherein R^{12} and R^{13}, independently, is a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or R^{12} and R^{13} are part of a cyclic ring having 3 to about 12 carbon atoms; and wherein R^{20} and R^{21} have a total of 3 to 5 carbon atoms.

9. A composition according to claim 7,

wherein R^{12} and R^{13}, independently, is a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or R^{12} and R^{13} are part of a cyclic ring having from 3 to about 12 carbon atoms; and wherein n is 0 to about 6.

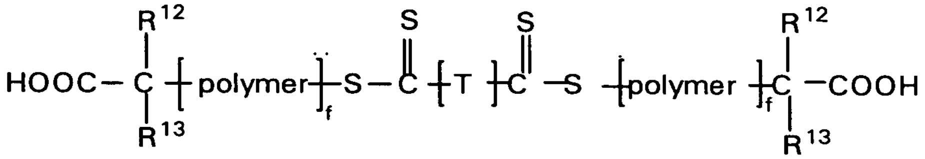
10. A composition, comprising:

a dithiocarbamate polymer or copolymer having the formula:



$$(R^{15})(R^{16})N-\overset{\overset{\displaystyle S}{\|}}{C}-S\left(\text{polymer}\right)_f C(R^{12})(R^{13})-COOH$$

or



$$\mathrm{HOOC}-\underset{R^{13}}{\overset{R^{12}}{C}}-\left[\text{polymer}\right]_f-S-\overset{S}{\overset{\|}{C}}-\left[T\right]-\overset{S}{\overset{\|}{C}}-S-\left[\text{polymer}\right]_f-\underset{R^{13}}{\overset{R^{12}}{C}}-\mathrm{COOH}$$

wherein each R^{12} and R^{13}, independently, is the same or different, is optionally substituted, and is a linear or branched alkyl having from 1 to about 12 carbon atoms; or an aryl group having from 6 to about 18 carbon atoms, optionally containing heteroatoms; or R^{12} and R^{13} can form and be part of a substituted or unsubstituted cyclic ring having from 3 to about 12 carbon atoms;

wherein R^{15} and R^{16}, independently, is the same or different, optionally substituted, optionally contains heteroatoms, and is hydrogen; or a linear or branched alkyl having from 1 to about 18 carbons; or an aryl group having from 6 to about 18 carbon atoms, optionally saturated or unsaturated; or an arylalkyl having from 7 to about 18 carbons; or an alkenealkyl having from 3 to about 18 carbon atoms; or derived from polyalkylene glycol ether; or derived from an amine; or R^{15} and R^{16} are in the form of a substituted or unsubstituted cyclic ring with the nitrogen atom having a total of 4 to about 12 carbon atoms;

wherein T is a divalent radical having a nitrogen atom directly connected to each carbon atom of the two thiocarbonyl groups;

wherein said polymer repeat units are derived from at least one conjugated diene monomer, or a vinyl containing monomer, or combinations thereof, with the proviso that each repeat unit can be the same or different; and

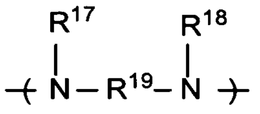
wherein the number of said repeat units f, independently, is from 1 to about 10,000.

11. A composition according to claim 10,

wherein R^{12} and R^{13}, independently, is a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or wherein R^{12} and R^{13} are part of a cyclic ring having from 3 to about 12 carbon atoms; and wherein R^{15} and R^{16}, independently, is a phenyl group, or an alkyl group having from 1 to about 10 carbon atoms, or hexamethylene, or wherein R^{15} and R^{16} are part of a cyclic ring having from 3 to about 12 carbon atoms.

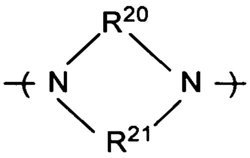
12. A composition according to claim 11, wherein R^{12} and R^{13} independently, is an alkyl having from 1 to about 4 carbon atoms, or wherein R^{12} and R^{13} are part of a cyclic ring having from 3 to about 12 carbon atoms.

13. A composition according to claim 10, wherein T is:



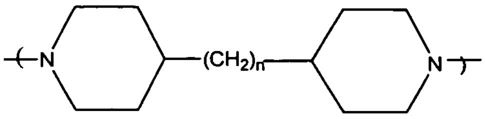
$-\overset{R^{17}}{\overset{|}{N}}-R^{19}-\overset{R^{18}}{\overset{|}{N}}-$

or

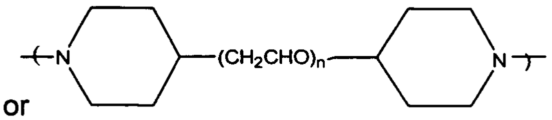
 ;

wherein R^{17} and R^{18}, independently, is the same or different, is optionally substituted, and is hydrogen; or a linear or branched alkyl having from 1 to about 18 carbon atoms; or an aryl group having from about 6 to about 18 carbon atoms; or an arylalkyl having from 7 to about 18 carbon atoms; or a alkenealkyl having from 3 to about 18 carbon atoms; wherein R^{19} is optionally substituted, or is non-existent; or an alkylene group having from 1 to about 18 carbon atoms; or derived from a polyalkylene glycol either having from 3 to about 200 carbon atoms; wherein R^{20} and R^{21}, independently, is the same or different, and is optionally substituted, and is an alkylene group having from 1 to about 4 carbon atoms, or

wherein T is:



or

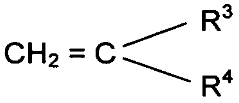


, wherein n is 0 to about 18.

14. A composition according to claim 13,

wherein R^{12} and R^{13}, independently, is a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or R^{12} and R^{13} are part of a cyclic ring having from 3 to about 12 carbon atoms; and wherein R^{20} and R^{21} have a total of 3 to 5 carbon atoms; and wherein n is 0 to about 6.

15. A composition according to claim 10, wherein said conjugated diene monomer has from 4 to 12 carbon atoms, and wherein said vinyl containing monomer has the formula:



$$CH_2=C\begin{matrix}\nearrow R^3\\ \searrow R^4\end{matrix}$$

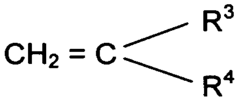
wherein R^3 comprises hydrogen, halogen, $C_1 - C_4$ alkyl, or substituted $C_1 - C_4$ alkyl wherein said substituents, independently, comprise one or more hydroxy, alkoxy, aryloxy(OR^5), carboxy, metal carboxylate (COOM) with M being sodium, potassium, calcium, zinc or an ammonium salt, acyloxy, aroyloxy(O_2CR^5), alkoxy-carbonyl(CO_2R^5), aryloxy-carbonyl; or N-pyrrolidonyl;

wherein R^4 comprises hydrogen, R^5, CO_2H, CO_2R^5, COR^5, CN, $CONH_2$, $CONHR^5$, O_2CR^5, OR^5 or halogen; and

wherein R^5 comprises $C_1 - C_{18}$ alkyl, substituted $C_1 - C_{18}$ alkyl, $C_2 - C_{18}$ alkenyl, aryl, heterocyclyl, aralkyl, or alkaryl, and

wherein said substituents, independently, comprise one or more epoxy, hydroxy, alkoxy, acyl, acyloxy, carboxy, carboxy salts, sulfonic acid, sulfonic salts, alkoxy- or aryloxy-carbonyl, dicyanato, cyano, silyl, halo or dialkylamino.

16. A composition according to claim 11, wherein said conjugated diene monomer has from 4 to 12 carbon atoms, and wherein said vinyl containing monomer has the formula:



$$CH_2 = C < \begin{matrix} R^3 \\ R^4 \end{matrix}$$

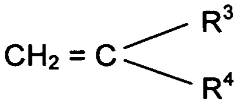
wherein R^3 comprises hydrogen, halogen, $C_1 - C_4$ alkyl, or substituted $C_1 - C_4$ alkyl wherein said substituents, independently, comprise one or more hydroxy, alkoxy, aryloxy(OR^5), carboxy, metal carboxylate (COOM) with M being sodium, potassium, calcium, zinc or an ammonium salt, acyloxy, aroyloxy(O_2CR^5), alkoxy-carbonyl(CO_2R^5), aryloxy-carbonyl; or N-pyrrolidonyl;

wherein R^4 comprises hydrogen, R^5, CO_2H, CO_2R^5, COR^5, CN, $CONH_2$, $CONHR^5$, O_2CR^5, OR^5 or halogen; and

wherein R^5 comprises $C_1 - C_{18}$ alkyl, substituted $C_1 - C_{18}$ alkyl, $C_2 - C_{18}$ alkenyl, aryl, heterocyclyl, aralkyl, or alkaryl, and

wherein said substituents, independently, comprise one or more epoxy, hydroxy, alkoxy, acyl, acyloxy, carboxy, carboxy salts, sulfonic acid, sulfonic salts, alkoxy- or aryloxy-carbonyl, dicyanato, cyano, silyl, halo or dialkylamino.

17. A composition according to claim 13, wherein said conjugated diene monomer has from 4 to 12 carbon atoms, and wherein said vinyl containing monomer has the formula:



$$CH_2 = C < \begin{matrix} R^3 \\ R^4 \end{matrix}$$

wherein R^3 comprises hydrogen, halogen, $C_1 - C_4$ alkyl, or substituted $C_1 - C_4$ alkyl wherein said substituents, independently, comprise one or more hydroxy, alkoxy, aryloxy(OR^5), carboxy, metal carboxylate (COOM) with M being sodium, potassium, calcium, zinc or an ammonium salt, acyloxy, aroyloxy(O$_2$CR^5), alkoxy-carbonyl(CO$_2$R^5), aryloxy-carbonyl; or N-pyrrolidonyl;

wherein R^4 comprises hydrogen, R^5, CO$_2$H, CO$_2$R^5, COR^5, CN, CONH$_2$, CONHR^5, O$_2$CR^5, OR^5 or halogen; and

wherein R^5 comprises $C_1 - C_{18}$ alkyl, substituted $C_1 - C_{18}$ alkyl, $C_2 - C_{18}$ alkenyl, aryl, heterocyclyl, aralkyl, or alkaryl, and

wherein said substituents, independently, comprise one or more epoxy, hydroxy, alkoxy, acyl, acyloxy, carboxy, carboxy salts, sulfonic acid, sulfonic salts, alkoxy- or aryloxy-carbonyl, dicyanato, cyano, silyl, halo or dialkylamino.

18. A composition according to claim 15, wherein said polymer repeat unit is derived from alkyl acrylate, vinyl acetate, acrylic acid, or styrene, N-vinyl pyrrolidone or a combination thereof, and wherein said number of repeat units f is from about 3 to about 5,000.

19. A composition according to claim 16, wherein said polymer repeat unit is derived from alkyl acrylate, vinyl acetate, acrylic acid, or styrene, N-vinyl pyrrolidone or a combination thereof, and wherein said number of repeat units f is from about 3 to about 5,000.

20. A composition according to claim 17, wherein said polymer repeat unit is derived from alkyl acrylate, vinyl acetate, acrylic acid, or styrene, N-vinyl pyrrolidone or a combination thereof, and wherein said number of repeat units f is from about 3 to about 5,000.

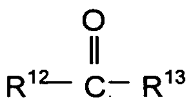
21. A method for forming a dithiocarbamate compound, comprising the steps of:

reacting a metal salt of a dithiocarbamate, a haloform, and a ketone in the presence of a base, and optionally a solvent and a catalyst, to form a reaction product; and

acidifying said reaction product to form said dithiocarbamate compound.

22. A method according to claim 21, wherein said reaction is conducted at a temperature from about minus 15°C to about 80°C.

23. A method according to claim 22, wherein said haloform is chloroform or bromoform, or a blend thereof, and wherein said ketone has the formula:

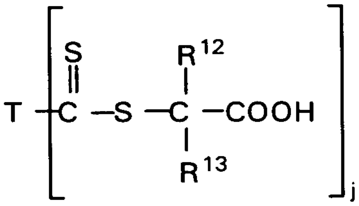


$$R^{12}-\overset{\overset{\displaystyle O}{\|}}{C}-R^{13}$$

wherein R^{12} and R^{13}, independently, can be the same or different, can optionally be substituted, and can be a linear or branched alkyl having from 1 to about 12 carbon atoms; or an aryl group having from 6 to about 18 carbon atoms, optionally containing heteroatoms; or R^{12} and R^{13} can form and be part of a substituted or unsubstituted cyclic ring having from 3 to about 12 carbon atoms.

24. A method according to claim 23, including said catalyst.

25. A method according to claim 23, wherein said dithiocarbamate has the formula:



$$T\left[\overset{\overset{\displaystyle S}{\|}}{C}-S-\underset{\underset{\displaystyle R^{13}}{|}}{\overset{\overset{\displaystyle R^{12}}{|}}{C}}-COOH\right]_j$$

wherein j is 1 or 2;

wherein R^{12} and R^{13}, independently, is the same or different, is optionally substituted, and is a linear or branched alkyl having from 1 to about 12 carbon atoms; or an aryl group having from 6 to about 18 carbon atoms, optionally containing heteroatoms; or R^{12} and R^{13} can form and be part of a substituted or unsubstituted cyclic ring having from 3 to about 12 carbon atoms;

with the proviso that when j is 1, T is $-(NR^{15}R^{16})$, and when j is 2, T is a divalent radical having a nitrogen atom directly connected to each carbon atom of the two thiocarbonyl groups; and

wherein R^{15} and R^{16}, independently, is the same or different, optionally substituted, optionally contains heteroatoms, and is hydrogen; or a linear or branched alkyl having from 1 to about 18 carbons; or an aryl group or an aryl alkyl group having from 6 to about 18 carbon atoms, optionally saturated or unsaturated; or an arylalkyl having from 7 to about 18 carbons; or an alkenealkyl having from 3 to about 18 carbon atoms; or derived from polyalkylene glycol ether; or derived from an amine; or R^{15} and R^{16} are in the form of a substituted or unsubstituted cyclic ring with the nitrogen atom having a total of 4 to about 12 carbon atoms.

26. A method according to claim 25, wherein said haloform is utilized in an amount from 0 percent to about 500 percent molar excess and said ketone is used in an amount from 0 percent to about 300 percent molar excess, based on the molar amount of said metal salt of said dithiocarbamate.

27. A method according to claim 26, wherein said R^{12} and R^{13}, independently are a phenyl group, or an alkyl group having 1 to about 10 carbon atoms, or wherein R^{12} and R^{13} are part of said cyclic ring, and R^{15} and R^{16}, independently, are a phenyl group, an alkyl group having from 1 to

about 10 carbon atoms, or hexamethylene, or wherein R^{15} and R^{16} are part of said cyclic ring.

28. A method according to claim 22, further comprising the step of reacting at least one vinyl-containing monomer, or at least one conjugated diene monomer in the presence of said dithiocarbamate compound.

29. A method according to claim 26, wherein said haloform is utilized in an amount from about 50 percent to about 200 percent molar excess and wherein the ketone is utilized in the reaction in an amount from about 100 percent to about 1000 percent molar excess based on the molar amount of said metal salt of said dithiocarbamate.